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Opening extract from

101 Things You Wish You'd Invented

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Introduction

Ever wondered how a lie detector works? Or how a thermometer measures the temperature? Why we need time zones, or why some people thought nuclear weapons were a good idea? The world is full of incredible **Inventions** (and some not so good ones), far too many to learn about them all, so here are 101 of the cleverest, weirdest and best.

Discover

Learn how the visually impaired read, how to make your own mini hot-air balloon, how to terraform a planet and what 'dit' and 'dot' mean. The answers lie inside, so sharpen your curiosity – and prepare to be amazed ...

Complete

Keep track of the **Inventions** you have explored by filling in the easy-to-follow forms.

Bask in the Glory

When you have finished, you will have developed a keen, enquiring and, most importantly, inventive mind to rival Leonardo himself.



How to Use This Book

The idea is simple. Master the **101 Things You Wish You'd Invented and Some You Wish No One Had**, tick the boxes, fill in the forms and stick in the coloured stars as you go.

About the Forms

- Be honest with the information you enter in the forms.
- There may be a few tricky questions on some of the forms. Don't worry if you get stuck – you'll find the answers at the back of the book.
- You may find some of the forms too small for all the information you'd like to enter. To solve this problem you can copy the extra pages at the back of the book or visit the website for extra or duplicate pages at **www.101thingstodo.co.uk**.

Your **Inventions**

If there are some **Inventions** which aren't mentioned in the book, add your top ten **Inventions** on the pages provided at the back.

Helpful Tips

The tips on the opposite page offer some guidelines to completing the **Things You Wish You'd Invented**.

Tips

- [x] Master as many **Inventions** as possible and fill in your results in the book as you go along.

- [x] Always carry this book with you to dazzle anyone and everyone with amazing **Invention** facts.

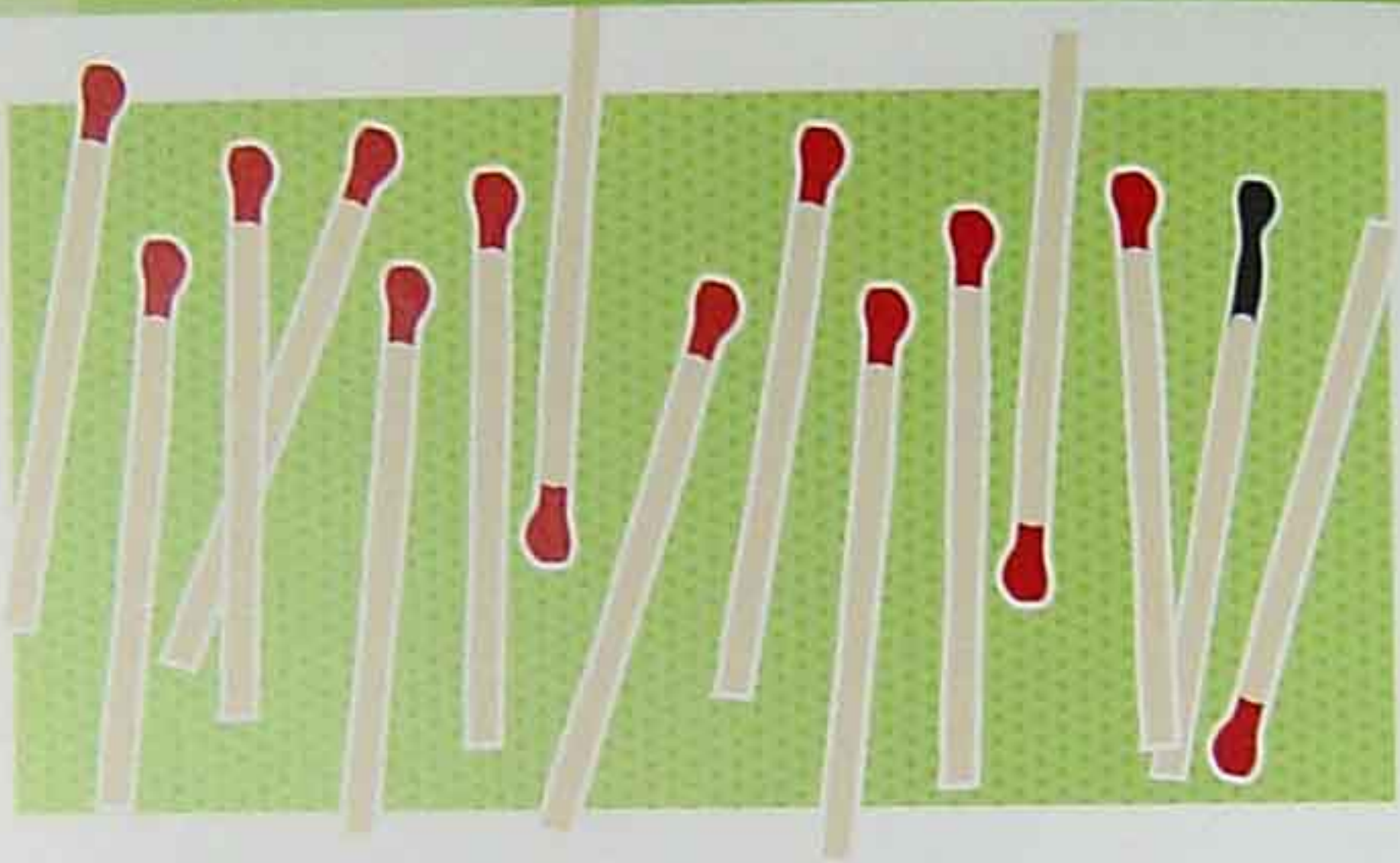
- [x] As you learn about more amazing **Inventions**, be aware that friends may envy how interesting and knowledgeable you've become.

- [x] You don't have to go it alone. Many of the **Inventions** will be more fun if you master them with the help of your friends (and stop them being envious too).

- [x] Push yourself. This book is crammed with fascinating **Inventions**, but there's always more to discover.

- [x] Think outside the box. If you find that some **Inventions** really interest you, don't stop here – do your own research and find out even more.

- [x] Above all, have fun. The **Inventions** are listed to enhance your daily life and make the world more interesting.



Matches

Considering how many years fire has been around, the invention of the match was a long time coming. Before matches there were various methods for lighting a fire, all of them painfully slow. The best one was a tinder box, which used steel, flint and tinder – material that would easily catch fire, such as charred cloth or flakes of wood. The tinder had to be very dry for it to work well, so it often didn't. People were desperate for something faster and more effective.

Let There Be Light

- Sticks of wood impregnated with sulphur were used in China in the sixth century. In 1680 Robert Boyle developed the same thing in England. Boyle's matches had to be handled very carefully or they caught light unexpectedly.
- K. Chancel invented a match that used sulphur, asbestos and sulphuric acid, among other things. As you can imagine, this was quite dangerous too.
- In 1826 John Walker invented a match that worked by friction. The mixture of chemicals he used on the head of the match burst into flames at low temperatures – striking it against a rough surface was enough to light one. Unfortunately this made them dangerous. And they smelled terrible, too.
- In 1845 Swedish inventor J. Lundstrom made striking a match a lot safer. His idea was to put some of the chemicals on the match head and some on the striking surface – unless the two came into contact, they wouldn't catch fire. They were known as safety matches.

Phosphorus was used in making matches until the early 20th century. It could be deadly to factory workers, who might develop 'phossy jaw', a terrible condition that made the jawbone glow in the dark and could eventually kill the sufferer.

Matches **Form**

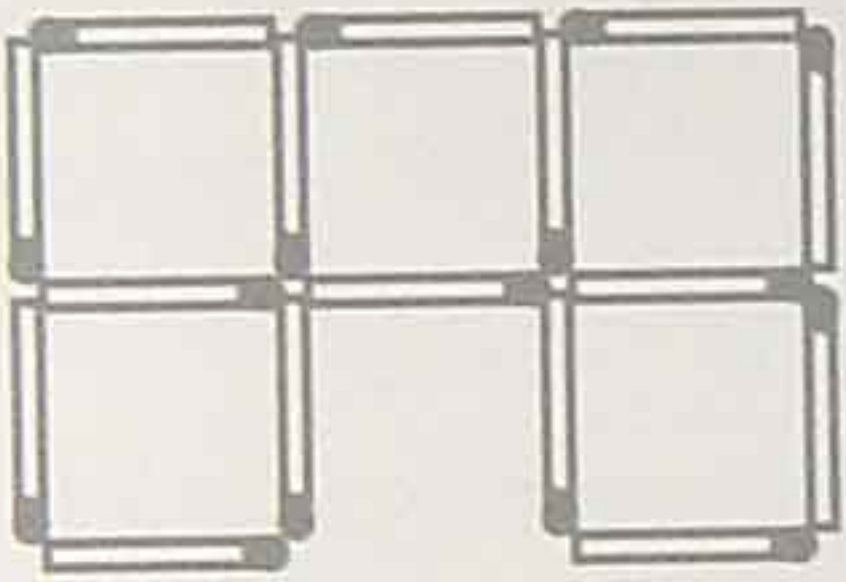
Once you have put this **Invention** to good use, stick your Achieved Star here and fill in the form

Achieved

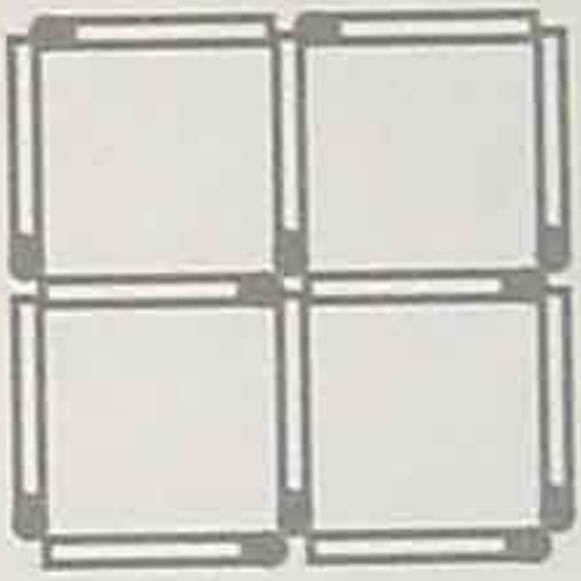
HAVE YOU MET YOUR MATCH?

Can you solve the following puzzles without overlapping any matches or leaving any loose ends? Solve the puzzles then baffle others with them to earn your star.

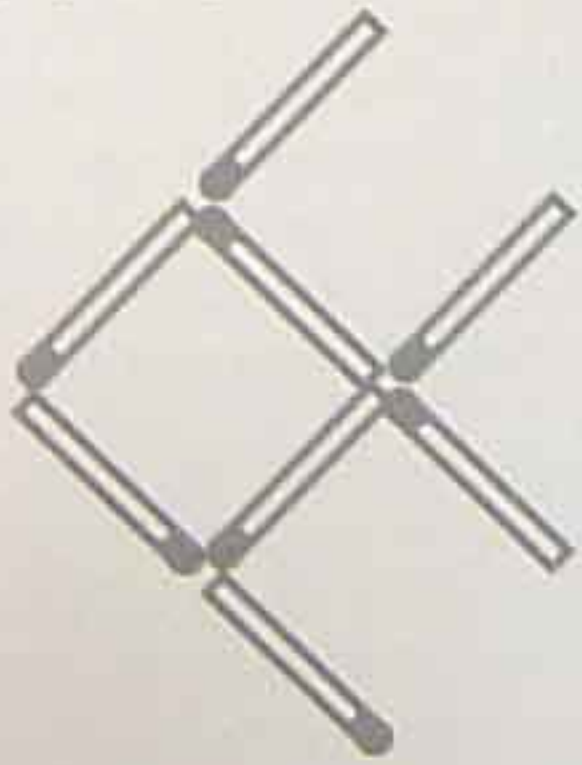
Puzzle 1
Can you make four complete squares by moving only three matches?



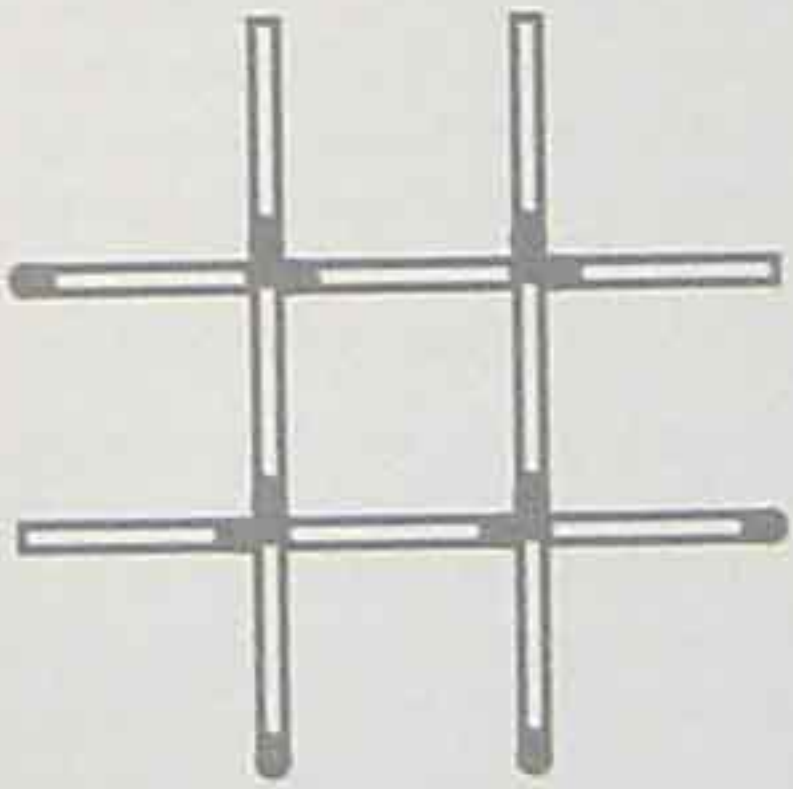
Puzzle 2
Can you make two squares by removing two matches?



Puzzle 3
Can you make the fish face the other way by moving only three matches?



Puzzle 4
Can you make three complete squares by moving only three matches?



Puzzle 5
Can you make four complete triangles by moving only two matches?



Give up? OK, then, you'll find the answers at the back of the book ...

At the same time you can check out these Things You Wish You'd Invented:

12: Dynamite • 65: Gunpowder • 70: Fireworks